UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,154	01/20/2004	Grant L. Hutchison	0920.0061C	7744

46157   7590   01/02/2008

EDELL, SHAPIRO, & FINNAN, LLC
1901 RESEARCH BOULEVARD, SUITE 400
ROCKVILLE, MD 20850

EXAMINER
BLACK, LINH

ART UNIT	PAPER NUMBER
2163	

MAIL DATE	DELIVERY MODE
01/02/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/759,154	HUTCHISON ET AL.
	Examiner	Art Unit	
	LINH BLACK	2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 September 2007</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-17</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-17</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

This communication is responsive to the Applicants' documents dated 9/26/07. Claims 1-18 are pending in the application. Claims 1, 7, and 13 are independent claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 4-8, 10-14, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al. (5625815), and further in view of Reiner et al. (US 6289334).

As per claims 1, 7, 13, and 5, Maier et al. teach query against a database - col. 3, line 54 to col. 4, line 6; the database includes a plurality of partitions for storing different portions of said database table data based on a partitioning schema – col. 2, lines 23-32; col. 3, line 54 to col. 4, line 6; database tables and catalog(s) – fig. 1, items 120, 126; each partition associated with a partition identifier and database catalog

information indicating data organization in said database – col. 2, lines 29-34; partition

identification, partition's names: Old Partition, New Partition – col. 8, lines 15-23 or

partition 1 and partition 2 etc...- col. 12, first paragraph; (a) retrieving information within

said database catalog information associated with said database table containing said

desired data and relating to the partitioning schema – col. 3, line 54 to col. 4, line 6; col.

4, line 61 to col. 5, line 3; (b) analyzing the contents of the query and the retrieved

database catalog information to determine the specific partition containing the database

table portion with the desired data and identifying a partition identifier associated with

the specific partition - col. 3, line 54 to col. 4, line 6. However, Maier et al. do not

explicitly teach (c) executing the query against said specific partition, whereby said

desired data is retrieved. Reiner et al. teach a database table contained among plural

independently accessible partitions – col. 2, lines 53-60; decomposing the queries for

matching records in the corresponding table partition – col. 2, last paragraph; col. 9, 2nd

paragraph; fig. 3B: database 72 with partition 1-3. Reiner et al. also teach an SQL

query, a partitioning table, data dictionary, analyzing query – col. 34, lines 43-63. Thus,

it would have been obvious to one of ordinary skill in the art at the time of the invention

to combine Maier et al.'s teaching with Reiner et al.'s teaching in order to allow queries

against the database be analyzed and forwarded to the appropriate partitions which

helps save time and operation costs.

As per claims 2, 8, and 14, Maier et al. teach storing the retrieved database catalog

information in a database catalog cache – fig. 1, items 124-126 and 116-1.

As per claims 4, 10, and 16, Maier et al. do not explicitly teach resolving the partition identifier. Reiner et al. teach a database table contained among plural independently accessible partitions – col. 2, lines 53-60; decomposing the queries for matching records in the corresponding table partition – col. 2, last paragraph; col. 9, 2nd paragraph; fig. 3B: database 72 with partition 1-3. Reiner et al. also teach an SQL query, a partitioning table, data dictionary, analyzing query – col. 34, lines 43-63. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Maier et al.'s teaching with Reiner et al.'s teaching in order to allow queries against the database be analyzed and forwarded to the appropriate partitions which helps save time and operation costs.

As per claims 6, 12, and 18, Maier et al. do not explicitly teach forwarding the retrieved data to a client application requesting table data. Reiner et al. teach generate an assembled result representative of a response to said query client application program – claim 1c; fig. 11. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Maier et al.'s teaching with Reiner et al.'s teaching in order to provide query results to the client application program.

Claims 3, 9, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al. (5625815), in view of Reiner et al. (US 6289334), and further in view of Weinberg et al. (US 20030233347).

As per claims 3, 9, and 15, Maier et al. teach the database catalog in the catalog cache

- fig. 1, items 124-126 and 116-1. However, Maier and Reiner do not teach building a

subset of the database catalog. Weinberg et al. teach storing and retrieving data in

database systems – par. 0046; search the sub-set of catalog data using a first lookup in

the sub-tables – par. 0019. Thus, it would have been obvious to one of ordinary skill in

the art at the time of the invention to combine Maier et al.'s teaching with Reiner et al.'s

and Weinberg's teachings in order to allow searches/queries to quickly retrieve

information from the appropriate partitions.

Response to Arguments

Applicant's arguments with respect to claims 1-18 have been considered but are not

persuasive. Regarding the Response dated 9/26/07, Applicants argued that the prior

art does not teach "determine a specific partition from among said plurality of partitions

containing the database table portion with the desired data satisfying said query and

identifying a partition identifier associated with the specific partition." Examiner

disagrees.

As specified in the Office Action, col. 2, lines 29-34 teaches "The present

invention operates in a database computer system having memory, residing in a

plurality of interconnected computer nodes, for storing database tables. Each

database table or index has a plurality of columns, a primary key index based on a

specified subset of the columns, and an associated table schema. In most

implementations, at least some of the database tables or indexes are partitioned into a

plurality of partitions, each partition storing records having primary key values in a primary key range distinct from the other partitions."

Col. 3, line 54 to col. 4, line 6 teaches "(4)   As shown in FIG. 1, the database server 102 includes a central processing unit (CPU) 110, primary memory 112, a communications interface 114 for communicating with user workstations 104, 106 as well as other system resources not relevant here. Secondary memory 116-1, 116-2, typically magnetic disc storage, in the database server 102 stores database tables 120, database indices 122, a database management system (DBMS) 124 for management of the database tables and associated data structures and resources, and one or more catalogs 126 for storing schema information about the database tables 120 as well directory information for programs used to access the database tables. The DBMS 124 includes an SQL executor 128 for executing SQL statements (i.e., database queries) and an SQL catalog manager 130 for maintenance of the catalogs 126 and for performing database definition and restructuring operations..." It is well known in the technological art that indices are used to determine which tables, partitions, etc...contain a specific content that relating to a user's query, so the query statement can be executed against that particular table/partition etc...in order to save time and cost. Therefore, even though Maier et al. do not explicitly suggest the limitation "determining" but it is inherently done in the process of utilizing either catalogs or indexes. However, Examiner further cited Reiner et al.'s teaching in order to show that the process of determining is not novel in the art.

Reiner et al., at col. 2, line 53 to its last paragraph, teach "having a database

management system (DBMS) that accesses data records stored in a database table

contained among plural independently accessible partitions (e.g., data partitions

contained on separate disk drives), where that DBMS has a standard interface for

processing queries to access those data records... the standard interface is often

called the "server" interface; it is accessed by clients that are the source of queries. A

decomposition element within the parallel interface generates multiple subqueries from

the intercepted query. Those subqueries, each representing a request for access to

data stored in a respective partition of the table, are applied in parallel to the standard

interface in lieu of the intercepted query...", col. 9, 2nd paragraph teaches "As noted

above, the decomposer 74A generates subqueries based on the conventional format

query intercepted from the initiating process. For simple, single-table queries, the

decomposer 74A generates corresponding .subqueries by duplicating the query and

appending a predicate for matching records in the corresponding table partition. Thus,

for example, a query in the form

(2)   SELECT name, department_number FROM employee WHERE

department_number = 10

(17)   would result in the first subquery of the form:

(3)   SELECT name, department_number FROM employee WHERE

department_number = 10 AND employee.rowid>=0.0.1 AND

employee.rowid<0.0.2

(18)   where rowid has three parts, the last of which indicates the partition

<u>number. Other subqueries would be of similar form, with changes to the</u>

<u>partition numbers referenced in the rowid predicates."</u>

Thus, Reiner et al. do teach executing a query against a specific partition.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to LINH BLACK whose telephone number is 571-272-

4106. The examiner can normally be reached on Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LINH BLACK
Examiner
Art Unit 2163

December 20, 2007

WILSON LEE
PRIMARY EXAMINER